



(11) **EP 1 726 957 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
11.07.2007 Bulletin 2007/28

(51) Int Cl.:
G01N 33/543 ^(2006.01) **B01J 19/00** ^(2006.01)
C12Q 1/68 ^(2006.01)

(43) Date of publication A2:
29.11.2006 Bulletin 2006/48

(21) Application number: **06018875.2**

(22) Date of filing: **24.04.1997**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV RO SI

(30) Priority: **25.04.1996 US 16642 P**

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
97926496.7 / 0 907 889

(71) Applicant: **BioArray Solutions Ltd.**
Piscataway, NJ 07023 (US)

(72) Inventor: **Seul, Michael**
Fanwood, New Jersey 07023 (US)

(74) Representative: **Held, Stephan et al**
Meissner, Bolte & Partner GbR
Postfach 86 03 29
81630 München (DE)

(54) **Light-controlled electrokinetic assembly of particles near surfaces**

(57) A method of detecting the formation of an analyte-biomolecule complex comprising the following steps: providing a planar array of biomolecules comprising a plurality of beads having biomolecules attached thereto, wherein the plurality of beads comprises different bead types, said bead types being distinguishable by said biomolecules and each bead type being associated with a unique chemical or physical characteristic that identifies the biomolecules attached to said bead type, wherein beads are arranged in a planar array and biomolecules attached to said beads are exposed to a contiguous liquid phase, said biomolecules capable of forming complexes with corresponding analyte compounds, when said ana-

lyte compounds are present in said liquid phase; contacting the biomolecules with a sample that may contain one or more analyte compounds such that, if the analytes are present in the sample, said analytes bind to corresponding biomolecules to form analyte-biomolecule complexes; detecting the formation of the analyte-biomolecule complexes; and identifying the biomolecules of the analyte-biomolecule complexes by correlating the location of the analyte-biomolecule complexes with particular bead types, based on the unique chemical or physical characteristics of the beads.

EP 1 726 957 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 01 8875

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 96/00148 A (AFFYMAX TECH NV [NL]; HOLMES CHRISTOPHER P [US]) 4 January 1996 (1996-01-04) * the whole document * in particular page 14, lines 13-28; page 19, lines 17-31; page 41, line 12 - page 44, line 9; page 48, lines 6 - 30; page 50, lines 3 - 9; -----	1-13	INV. G01N33/543 B01J19/00 C12Q1/68
Y	WO 96/07917 A (NANOGEN [US]) 14 March 1996 (1996-03-14) * the whole document * in particular page 18, line 23 - page 19, line 5; page 26, lines 1-8; page 30, line 34 - page 31, line 29; page 35, lines 4 - 15; -----	1-13	
Y	WO 93/06121 A (AFFYMAX TECH NV [NL]) 1 April 1993 (1993-04-01) * the whole document * in particular page 15, line 27 - page 19, line 5; page 20, line 19 - page 21, line 17; page 29, line 27 - page 31, line 6; -----	1-13	TECHNICAL FIELDS SEARCHED (IPC) G01N B01J C12Q
Y	WO 94/28028 A (SELECTIDE CORP [US]) 8 December 1994 (1994-12-08) * abstract * * page 6, line 16 - page 9, line 2 * * page 61, line 24 - page 70, line 5 * ----- -/--	1-13	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 31 May 2007	Examiner Thumb, Werner
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

1
EPO FORM 1503 03 82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 01 8875

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
P,X	WO 96/41011 A (SPECTRAGEN INC [US]) 19 December 1996 (1996-12-19) * the whole document * in particular page 4, line 37 - page 5, line 11; page 17, line 9 - page 19, line 30; page 31, line 24 - page 33, line 21. -----	1-13	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 31 May 2007	Examiner Thumb, Werner
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

1
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 01 8875

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-05-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9600148	A	04-01-1996	AU 2948595 A	19-01-1996
			US 5549974 A	27-08-1996

WO 9607917	A	14-03-1996	AT 220459 T	15-07-2002
			AU 702773 B2	04-03-1999
			AU 3507095 A	27-03-1996
			BR 9508908 A	28-10-1997
			CA 2199515 A1	14-03-1996
			CN 1164894 A	12-11-1997
			DE 69527375 D1	14-08-2002
			DE 69527375 T2	13-02-2003
			DK 871888 T3	14-10-2002
			EP 0871888 A1	21-10-1998
			ES 2179114 T3	16-01-2003
			FI 970957 A	07-05-1997
			JP 10505497 T	02-06-1998

WO 9306121	A	01-04-1993	AT 148889 T	15-02-1997
			AU 669489 B2	13-06-1996
			AU 2661992 A	27-04-1993
			CA 2118806 A1	01-04-1993
			DE 69217497 D1	27-03-1997
			DE 69217497 T2	12-06-1997
			DK 604552 T3	04-08-1997
			EP 0604552 A1	06-07-1994
			ES 2097925 T3	16-04-1997
			GR 3023156 T3	30-07-1997
			JP 2001524926 T	04-12-2001
			US 5789162 A	04-08-1998
			US 5708153 A	13-01-1998
			US 5770358 A	23-06-1998

WO 9428028	A	08-12-1994	AT 232882 T	15-03-2003
			AU 686186 B2	05-02-1998
			AU 7048694 A	20-12-1994
			CA 2163637 A1	08-12-1994
			DE 69432147 D1	27-03-2003
			DE 69432147 T2	27-11-2003
			DK 705279 T3	10-06-2003
			EP 0705279 A1	10-04-1996
			ES 2204921 T3	01-05-2004
			JP 3394777 B2	07-04-2003
			JP 9501490 T	10-02-1997
			NZ 267843 A	24-10-1997
			PT 705279 T	31-07-2003
			US 6090912 A	18-07-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 01 8875

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-05-2007

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 9641011	A	19-12-1996	EP	0832287 A1		01-04-1998
			HU	9900910 A2		28-07-1999
			JP	11507528 T		06-07-1999
			NO	975744 A		05-02-1998
